Site: Shiloh Church Road Site **Task: Discrete Object Recovery**

Date: 7/24/19

Predicted Predominant Wind Direction: N

Predicted Maximum Wind Speed: 4 mph

Ludlum 3030 Serial Number:	**187982**	**Cal Due Date:**	**2/19/2020**
Th-230 4π efficiency:	**0.3244**	**Tc-99 4π efficiency:**	**0.3155**
Pu-239 4π efficiency:	**0.3996**	**C-14 4π efficiency:**	**0.0679**
Am-241 4π efficiency:	**0.3452**	**Sr-90 4π efficiency:**	**0.4264**

Notes: AC-1 assigned to Team A. AC-5 assigned to Team B.

Radionuclide Air Sampling
Daily Summary
Shiloh Church Road Site
Halifax County, Virginia

Date: 7/24/19	Predicted Predominant Wind Direction: N			
Public Results				
Effluent Limits	Alpha (Ra-226)	9.00E-13	Beta (Pb-210)	6.00E-13
Air Sampler Location	% Of Effluent Concentration Limit	Alpha Result	% Of Effluent Concentration Limit	Beta Result
Perimeter-1 - South Break Area	<2.12%	-1.05E-14	<97.85%	2.30E-13
Worker Results				
Derived Air Concentrations	Alpha (Ra-226)	3.00E-10	Beta (Pb-210)	1.00E-10
Tasks Monitored	% Of DAC	Alpha Result	% of DAC	Beta Result
AC-1 - Team A - Morning	<0.30%	-6.65E-14	<30.57%	-1.27E-11
AC-1 - Team A - Afternoon	<0.21%	-6.19E-14	<22.81%	-1.33E-11
AC-5 - Team B	<0.11%	-1.58E-13	<9.87%	2.89E-12

Comments:

Site: Shiloh Church Road Site

Task: Discrete Object Recovery

Air Sampling Unit: **Radeco H-810 ERT-148**

Calibrator Serial: 3267 **Cal Due Date: 8/9/20**

α isotope of concern	Ra-226	β isotope of concern	Pb-210

Start Date/Time	7/24/19 9:03	Stop Date/Time	7/24/19 16:46
		Total Liters	30,035

Analysis Date/Time	Hours After Collection	Bkg count time (min)	Sample count time (min)	α bkg (counts)	gross α (counts)	net α (cpm)	α MDA (µCi/mL)	α (µCi/mL)	β bkg (counts)	gross β (counts)	net β (cpm)	β MDA (µCi/mL)	β (µCi/mL)
7/26/19 15:59	47.2	120	60	61	47	0.28	1.94E-14	1.27E-14	4463	2222	-0.16	7.10E-13	-3.50E-14
7/29/19 12:00	115.2	120	110	95	62	-0.23	1.91E-14	-1.05E-14	4421	4167	1.04	5.87E-13	2.30E-13

Final Result	Hours After Collection	Bkg count time (min)	Sample count time (min)	α bkg (counts)	gross α (counts)	net α (cpm)	α MDA (µCi/mL)	α (µCi/mL)	β bkg (counts)	gross β (counts)	net β (cpm)	β MDA (µCi/mL)	β (µCi/mL)
7/29/19 12:00	115.2	120	110	95	62	-0.23	1.91E-14	-1.05E-14	4421	4167	1.04	5.87E-13	2.30E-13
							% Eff Criteria:	<2.12%				% Eff Criteria:	<97.85%

Notes:

Site: Shiloh Church Road Site

Task: Discrete Object Recovery

Air Sampling Unit: **AirCheck XR5000 AC-1**

Dry Cal Serial: 103926 **Cal Due Date: May 2019**

α isotope of concern	Ra-226	β isotope of concern	Pb-210

Pre Flow Rate (LPM)	**4.688**				**Post Flow Rate (LPM)**				**4.972**				
Start Date/Time	**7/24/19 9:25**				**Stop Date/Time**				**7/24/19 12:20**				
					Total Liters				**695.5**				
Analysis Date/Time	**Hours After Collection**	**Bkg count time (min)**	**Sample count time (min)**	**α bkg (counts)**	**gross α (counts)**	**net α (cpm)**	**α MDA (µCi/mL)**	**α (µCi/mL)**	**β bkg (counts)**	**gross β (counts)**	**net β (cpm)**	**β MDA (µCi/mL)**	**β (µCi/mL)**
7/24/19 13:32	**1.2**	**60**	**10**	**59**	**16**	**0.62**	**2.82E-12**	**1.23E-12**	**2272**	**393**	**1.43**	**6.85E-11**	**1.37E-11**
7/25/19 16:19	**28.0**	**120**	**60**	**70**	**33**	**-0.03**	**8.92E-13**	**-6.65E-14**	**4436**	**2138**	**-1.33**	**3.06E-11**	**-1.27E-11**
Final Result	**Hours After Collection**	**Bkg count time (min)**	**Sample count time (min)**	**α bkg (counts)**	**gross α (counts)**	**net α (cpm)**	**α MDA (µCi/mL)**	**α (µCi/mL)**	**β bkg (counts)**	**gross β (counts)**	**net β (cpm)**	**β MDA (µCi/mL)**	**β (µCi/mL)**
7/25/19 16:19	**28.0**	**120**	**60**	**70**	**33**	**-0.03**	**8.92E-13**	**-6.65E-14**	**4436**	**2138**	**-1.33**	**3.06E-11**	**-1.27E-11**
							% DAC:	**<0.30%**				**% DAC:**	**<30.57%**

Notes: Assigned to Team A. Morning run only due to dampness of filter. Beta DAC MDA greater than 10% due to short runtime.

Site: Shiloh Church Road Site

Task: Discrete Object Recovery

Air Sampling Unit: **AirCheck XR5000 AC-1**

Dry Cal Serial: 103926	**Cal Due Date: May 2019**				**α isotope of concern**			**Ra-226**	**β isotope of concern**			**Pb-210**	
Pre Flow Rate (LPM)	**4.859**				**Post Flow Rate (LPM)**				**4.731**				
Start Date/Time	**7/24/19 13:29**				**Stop Date/Time**				**7/24/19 17:10**				
					Total Liters				**935.0**				
Analysis Date/Time	**Hours After Collection**	**Bkg count time (min)**	**Sample count time (min)**	**α bkg (counts)**	**gross α (counts)**	**net α (cpm)**	**α MDA (µCi/mL)**	**α (µCi/mL)**	**β bkg (counts)**	**gross β (counts)**	**net β (cpm)**	**β MDA (µCi/mL)**	**β (µCi/mL)**
7/26/19 14:53	**45.7**	**120**	**60**	**61**	**28**	**-0.04**	**6.24E-13**	**-6.19E-14**	**4463**	**2119**	**-1.88**	**2.28E-11**	**-1.33E-11**
Final Result	**Hours After Collection**	**Bkg count time (min)**	**Sample count time (min)**	**α bkg (counts)**	**gross α (counts)**	**net α (cpm)**	**α MDA (µCi/mL)**	**α (µCi/mL)**	**β bkg (counts)**	**gross β (counts)**	**net β (cpm)**	**β MDA (µCi/mL)**	**β (µCi/mL)**
7/26/19 14:53	**45.7**	**120**	**60**	**61**	**28**	**-0.04**	**6.24E-13**	**-6.19E-14**	**4463**	**2119**	**-1.88**	**2.28E-11**	**-1.33E-11**
							% DAC:	**<0.21%**				**% DAC:**	**<22.81%**

Notes: Assigned to Team A. Afternoon run only due to dampness of morning filter. Beta DAC MDA greater than 10% due to short runtime.

Site: Shiloh Church Road Site

Task: Discrete Object Recovery

Air Sampling Unit: **AirCheck XR5000 AC-5**

Dry Cal Serial: 103926 **Cal Due Date: May 2019**

α isotope of concern	Ra-226	β isotope of concern	Pb-210

Pre Flow Rate (LPM)	**4.669**				**Post Flow Rate (LPM)**				**4.865**				
Start Date/Time	**7/24/19 9:25**				**Stop Date/Time**				**7/24/19 17:10**				
					Total Liters				**2092.7**				
Analysis Date/Time	**Hours After Collection**	**Bkg count time (min)**	**Sample count time (min)**	**α bkg (counts)**	**gross α (counts)**	**net α (cpm)**	**α MDA (μCi/mL)**	**α (μCi/mL)**	**β bkg (counts)**	**gross β (counts)**	**net β (cpm)**	**β MDA (μCi/mL)**	**β (μCi/mL)**
7/29/19 9:46	**112.6**	**120**	**65**	**95**	**36**	**-0.24**	**3.29E-13**	**-1.58E-13**	**4421**	**2454**	**0.91**	**9.87E-12**	**2.89E-12**
Final Result	**Hours After Collection**	**Bkg count time (min)**	**Sample count time (min)**	**α bkg (counts)**	**gross α (counts)**	**net α (cpm)**	**α MDA (μCi/mL)**	**α (μCi/mL)**	**β bkg (counts)**	**gross β (counts)**	**net β (cpm)**	**β MDA (μCi/mL)**	**β (μCi/mL)**
7/29/19 9:46	**112.6**	**120**	**65**	**95**	**36**	**-0.24**	**3.29E-13**	**-1.58E-13**	**4421**	**2454**	**0.91**	**9.87E-12**	**2.89E-12**
							% DAC:	**<0.11%**				**% DAC:**	**<9.87%**

Notes: Assigned to Team B.